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141,590

PATENT



SPECIFICATION

Application Date. Aug. 12, 1919. No. 19,786/19.

" " Dec. 17, 1919. No. 31,621/19.

One Complete Specification Left, Dec. 19, 1919.

Complete Accepted, Apr. 22, 1920.

PROVISIONAL SPECIFICATION.

No. 19,786, A.D. 1919.

**An Improved Crutch applicable also for use as a Walking Stick  
or Elbow Crutch.**

I, ALBERT ERNEST WARRY, of Prentonwood, Ford Road, Upton, Birkenhead,  
Rubber Merchant, do hereby declare the nature of this invention to be as  
follows:—

This invention has for its object to provide an improved crutch for cripples  
5 and invalids which shall be convertible into a walking stick or elbow crutch.

The device in question comprises a crutch made of two or more tubular  
lengths or sections which are arranged to slip or telescope the one into the  
other, so that they can be extended for use as a crutch, or contracted so as to  
be suitable for use as a walking stick or elbow crutch. Furthermore the head  
10 of the device is arranged so as to be convertible into a crutch head or into a  
walking stick handle.

The tubular lengths or sections are by preference made of thin metal tubes,  
one of the tubes being shod with a pad or ferrule of rubber, leather, metal or  
other suitable material or with a spur to prevent slipping, and into this tube  
15 is adapted to telescope another tube of rather smaller diameter, the upper end  
of the said tube having mounted thereon a head member so arranged that it  
can be turned independently of the tube.

The tubular lengths or sections can be extended instantly to produce a crutch  
to the length required to suit the stature of the person using the crutch and  
20 then locked by a locking device, or by unlocking them they can be instantly  
contracted to produce a walking stick. Such locking device comprises a taper  
plug or cone member of such size that it will wedge itself into the end of the  
smaller tube (which end has longitudinal slits in it so as to render it expansible),  
and a rod screw threaded at the lower end so that it can be screwed into an  
25 axially threaded hole in the said plug. This rod passes through the interior  
of the smaller tube and its other end passes into the head member of the device,  
the said end being squared to fit a corresponding squared portion of the head  
member so that by turning the head member, the rod will be turned also. The  
plug is provided with feathers at opposite sides which enter longitudinal gaps  
30 in the lower end of the inner tube so as to prevent the said plug from  
rotating. By turning the head member in one direction the plug is drawn  
forcibly into the expansible end of the inner tube, thus expanding the latter  
and causing it to bind against the bore of the outer tube, thereby locking the  
tubular lengths or sections in their extended or contracted position,  
35 while by turning the head member in the other direction, the plug is forced out  
of contact with the said expansible end so that the tubular lengths are unlocked.

The head member is formed with a laterally projecting tubular part into

[Price 1/-]

Price 25/-

which is adapted to telescope another tube of rather smaller diameter. These tubes when extended form a crutch head to support the person beneath the arm pit, or when contracted they form a walking stick handle. This laterally projecting tubular part as well as its telescopic extension can be suitably curved, and the said telescopic extension has a longitudinal slot formed in it at the underside through which the upper end of the aforesaid rod passes, the said rod (which has a head at the top) terminating inside the tubular telescopic extension. 5

When the crutch is being used, the tubular lengths or sections are firmly locked together by the locking appliance aforesaid so that they cannot collapse, and the head of the internal rod binding against the inside of telescopic tubular extension keeps the said extension extended so as to support the person beneath the arm pit. When however the crutch is to be converted into a walking stick or elbow crutch, the head member is turned so as to force the plug member out of binding contact with the expansible end of the inner tube. This action also slackens the head of the rod from binding contact with the inside of the telescopic tubular extension of the crutch head. The tubular lengths or sections can now be contracted to a length suitable to form a walking stick or elbow crutch, and the crutch head is also contracted so as to form a walking stick handle or elbow. The head member is then turned so as to again lock the parts in their locked position. To extend the tubular lengths into a crutch again, the head member can be turned sufficiently to enable the feathers at the sides of the plug to clear the gaps at the lower end of the inner tube and cause such feathers to abut against the extreme end of the inner tube. Then by holding the outer tube in one hand, and pulling upon the head member with the other hand, the inner tube is extended to form a crutch of the length required. 10 15 20 25

If desired the crutch may be provided with a supplementary handle part way down so that when the crutch is being used, part of the weight of the user comes upon the handle, the crutch head carrying the remainder of the user's weight. This supplementary handle can be removed when the device is converted into a walking stick, and thus the invention provides a person who has had the misfortune to lose the use of a leg, with a device which he can use as an elbow crutch or walking stick, or which he can convert into a crutch wherein the direct upward pressure of the crutch head is on the arm pit. 30

In thus describing my invention I would have it understood that I do not confine myself to the precise details described as these may be varied without departing from the nature of the invention herein set forth. 35

For instance the device may be made up of more than two tubular sections or lengths telescoping into one another.

Dated this 11th day of August, 1919.

For the Applicant,

WM. P. THOMPSON & Co.,  
12, Church Street, Liverpool.

#### PROVISIONAL SPECIFICATION.

No. 31,621, A.D. 1919.

#### An Improved Crutch applicable also for use as a Walking Stick or Elbow Crutch.

I, ALBERT ERNEST WARRY, of Prentonwood, Ford Road, Upton, Birkenhead, Rubber Merchant, do hereby declare the nature of this invention to be as follows:— 45 50

This invention has for its object to provide an improved crutch for cripples and invalids which shall be convertible into a walking stick or elbow crutch.

The device in question comprises a crutch made of two or more tubular lengths or sections which are arranged to slip or telescope the one into the other, so that they can be extended for use as a crutch, or contracted so as to be suitable for use as a walking stick or elbow crutch. Furthermore the head of the device is arranged so as to be convertible into a crutch head or into a walking stick handle.

The tubular lengths or sections are by preference made of thin metal tubes, one of the tubes being shod with a pad or ferrule of rubber, leather, metal or other suitable material or with a spur to prevent slipping, and into this tube is adapted to telescope another tube of rather smaller diameter, the upper end of the said tube having mounted thereon a head member so arranged that it can be turned independently of the tube. The inner tube just below its upper end has an external collar formed integral with it or attached thereto. This collar forms a stop or abutment which prevents the inner tube being slipped or telescoped too far into the outer tube. The said collar may be milled.

The tubular lengths or sections can be extended instantly to produce a crutch to the length required to suit the stature of the person using the crutch and then locked by a locking device, or by unlocking them they can be instantly contracted to produce a walking stick. Such locking device comprises a taper plug or cone member of such size that it will wedge itself into the end of the smaller tube (which end has longitudinal slits in it so as to render it expansible), and a rod screw threaded at the lower end so that it can be screwed into an axially threaded hole in the said plug. This rod passes through the interior of the smaller tube and its other end passes into the head member of the device, the said end being squared to fit a corresponding squared portion of the head member so that by turning the head member, the rod will be turned also. The plug is provided with feathers at opposite sides which enter the longitudinal gaps or slits in the lower end of the inner tube so as to prevent the said plug from rotating. By turning the head member in one direction the plug is drawn forcibly into the expansible end of the inner tube, thus expanding the latter and causing it to bind against the bore of the outer tube, thereby locking the tubular lengths or sections in their extended or contracted position. By turning the head member in the other direction, the screw raises the head member above the top of the outer tube and then by grasping the head member in the hand and giving the device a sharp perpendicular tap on the ground, the plug is forced out of contact with the said expansible end, so that the tubular lengths are unlocked.

The head member is formed of a sleeve containing an internal bush having an axial hole in it square in cross section through which passes the squared end of the rod. The said sleeve whose bore is the same diameter as the outside of the inner tube extends a little beyond the bush so as to fit onto the inner tube at the top above the collar.

The sleeve has a laterally projecting tubular part into which is adapted to telescope another tube of rather smaller diameter. These tubes when extended form a crutch head to support the person beneath the arm pit, or when contracted they form a walking stick handle. This laterally projecting tubular part as well as its telescopic extension can be suitably curved, and the said telescopic extension has a longitudinal slot formed in it at the underside through which the upper end of the aforesaid rod passes the said rod (which has a head or a nut and washer at the top) terminating inside the tubular telescopic extension.

When the crutch is being used, the tubular lengths or sections are firmly locked together by the locking appliance aforesaid so that they cannot collapse, and the head of the internal rod binding against the inside of telescopic tubular extension keeps the said extension extended so as to support the person beneath the arm pit.

When however the crutch is to be converted into a walking stick or elbow

crutch, the head member is turned so that the screw thread at the end of the rod causes such head member to rise, and then by giving the crutch a sharp perpendicular tap on the ground the plug member is forced out of binding contact with the expansible end of the inner tube (by reason of the bush abutting against the collar on the rod). This action also slackens the head of the rod from binding contact with the inside of the telescopic tubular extension of the crutch head. The tubular lengths or sections can now be contracted to a length suitable to form a walking stick or elbow crutch that is to say with the collar abutting against the top of the outer tube, and the crutch head can also be contracted so as to form a walking stick handle or elbow. The head member is then turned so as to again lock the parts in their locked position. To extend the tubular lengths into a crutch again, the head member is turned and the tapping operation is repeated so as to bring the collar back against the top of the tube, and then by holding the outer tube in one hand, and pulling the milled head with the other hand, the inner tube is extended to form a crutch of the length required.

If desired the crutch may be provided with a supplementary handle part way down so that when the crutch is being used, part of the weight of the user comes upon the handle, the crutch head carrying the remainder of the user's weight. This supplementary handle can be removed when the device is converted into a walking stick, and thus the invention provides a person who has had the misfortune to lose the use of a leg, with a device which he can use as an elbow crutch or walking stick, or which he can convert into a crutch wherein the direct upward pressure of the crutch head is on the arm pit. To facilitate attachment and removal the supplementary handle is provided with a springy sleeve at one end to clasp the outer tube, a swing bolt being hinged to one jaw of the sleeve so that it can be swung into an open ended slot in the other jaw, and then by tightening up the wing nut the sleeve is clamped onto the outer tube.

In thus describing my invention I would have it understood that I do not confine myself to the precise details described as these may be varied without departing from the nature of the invention herein set forth.

For instance the device may be made up of more than two tubular sections or lengths telescoping into one another.

Dated this 16th day of December, 1919.

Agents for the Applicant,

W. P. THOMPSON & Co.,  
12, Church Street, Liverpool.

## COMPLETE SPECIFICATION.

### An Improved Crutch applicable also for use as a Walking Stick or Elbow Crutch.

I, ALBERT ERNEST WARRY, of Prentonwood, Ford Road, Upton, Birkenhead, Rubber Merchant, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has for its object to provide an improved crutch for cripples and invalids which shall be convertible into a walking stick or elbow crutch.

The device in question comprises a crutch made of two or more tubular lengths or sections which are arranged to slip or telescope the one into the

other, so that they can be extended for use as a crutch, or contracted so as to be suitable for use as a walking stick or elbow crutch. Furthermore the head of the device is arranged so as to be convertible into a crutch head or into a walking stick handle.

5 The invention will be understood from the following description reference being had to the accompanying drawings, in which:—

Figure 1 is a longitudinal section of the device showing the tubular lengths contracted for use as a walking stick.

10 Figure 2 is a similar view showing the tubular lengths ready to be unlocked for extension as a crutch and the crutch head extended.

Figure 3 is a side elevation of the device converted from a crutch into a walking stick.

The tubular lengths or sections are by preference made of thin metal tubes, one of the tubes A being shod with a pad or ferrule C of rubber, leather, metal or other suitable material or with a spur to prevent slipping, and into this 15 tube A is adapted to telescope another tube B of rather smaller diameter, the upper end of the said tube B having mounted thereon a head member D so arranged that it can be turned independently of the tube B. The inner tube B just below its upper end has an external collar B<sup>1</sup> formed integral with it or 20 attached thereto. This collar forms a stop or abutment which prevents the inner tube B being slipped or telescoped too far into the outer tube A. The said collar B<sup>1</sup> may be milled as shown.

The tubular lengths or sections A B can be extended instantly to produce a crutch to the length required to suit the stature of the person using the crutch 25 and then locked by a locking device, or by unlocking them they can be instantly contracted to produce a walking stick. Such locking device comprises a taper plug or cone member E of such size that it will wedge itself into the end of the smaller tube B (which end has longitudinal slits in it so as to render it 30 expandible), and a rod F screw threaded at the lower end so that it can be screwed into an axially threaded hole in the said plug E. This rod F passes through the interior of the smaller tube B and its other end passes into the head member D of the device, the said end F<sup>1</sup> being squared to fit a corresponding squared portion of the head member so that by turning the head member, the 35 rod F will be turned also. The plug E is provided with feathers G at opposite sides which enter the longitudinal gaps or slits in the lower end of the inner tube B so as to prevent the said plug E from rotating. By turning the head member D in one direction, the plug E is drawn forcibly into the expandible end of the inner tube B as shown in Figure 1, thus expanding the latter and 40 causing it to bind against the bore of the outer tube A, thereby locking the tubular lengths or sections A, B in their extended or contracted position. By turning the head member D in the other direction, the screw raises the head member above the top of the outer tube A as shown in Figure 2 and then by grasping the head member D in the hand and giving the device a sharp perpendicular tap on the ground, the plug E is forced out of contact with the said 45 expandible end, so that the tubular lengths are unlocked.

The head member is formed of a sleeve D containing an internal bush I having an axial hole in it square in cross section through which passes the squared end F<sup>1</sup> of the rod F. The said sleeve D whose bore is the same diameter 50 as the outside of the inner tube B extends a little beyond the bush I so as to fit onto the inner tube B at the top above the collar B<sup>1</sup>.

The sleeve D has a laterally projecting tubular part J into which is adapted to telescope another tube K of rather smaller diameter. These tubes when 55 extended form a crutch head to support the person beneath the arm pit as shown in Figure 2, or when contracted they form a walking stick handle as shown in Figures 1 & 3. This laterally projecting tubular part J as well as its telescopic extension K can be suitably curved, and the said telescopic extension has a

longitudinal slot L formed in it at the underside through which the upper end of the aforesaid rod F passes the said rod (which has a head or a nut and washer M at the top) terminating inside the tubular telescopic extension K.

When the crutch is being used, the tubular lengths or sections A B are firmly locked together by the locking appliance aforesaid so that they cannot collapse, and the head M of the internal rod F binding against the inside of telescopic tubular extension K keeps the said extension extended so as to support the person beneath the arm pit. 5

When however the crutch is to be converted into a walking stick or elbow crutch, the head member is turned so that the screw thread at the end of the rod F causes such head member D to rise from the position shown in Figure 1 to that shown in Figure 2, and then by giving the crutch a sharp perpendicular tap on the ground the plug member is forced out of binding contact with the expansible end of the inner tube (by reason of the bush I abutting against the collar N on the rod F). This action also slackens the head M of the rod from binding contact with the inside of the telescopic tubular extension of the crutch head. The tubular length or sections can now be contracted to a length suitable to form a walking stick or elbow crutch that is to say with the collar B<sup>1</sup> abutting against the top of the outer tube A, and the crutch head can also be contracted so as to form a walking stick handle of elbow. The head member D is then turned so as to again lock the parts in their locked position. To extend the tubular lengths into a crutch again, the tapping operation is repeated so as to bring the collar B<sup>1</sup> back against the top of the tube A, and then by holding the outer tube A in one hand, and pulling the milled head B<sup>1</sup> with the other hand, the inner tube B is extended to form a crutch of the length required. 10 15 20 25

If desired the crutch may be provided with a supplementary handle O (Figure 1) part way down so that when the crutch is being used, part of the weight of the user comes upon the handle, the crutch head carrying the remainder of the user's weight. This supplementary handle can be removed when the device is converted into a walking stick, and thus the invention provides a person who has had the misfortune to lose the use of a leg, with a device which he can use as an elbow crutch or walking stick, or which he can convert into a crutch wherein the direct upward pressure of the crutch head is on the armpit. To facilitate attachment and removal the supplementary handle O is provided with a springy sleeve P at one end to clasp the outer tube A, a swing bolt Q being hinged to one jaw of the sleeve so that it can be swung into an open ended slot in the other jaw, and then by tightening up the wing nut R the sleeve is clamped onto the outer tube A. 30 35

In thus describing my invention I would have it understood that I do not confine myself to the precise details described as these may be varied without departing from the nature of the invention herein set forth. 40

For instance the device may be made up of more than two tubular sections or lengths telescoping into one another.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:— 45

1. A crutch comprising two or more tubular lengths or sections which are arranged to skip or telescope the one into the other, so that they can be extended for use as a crutch, or contracted so as to be suitable for use as a walking stick or elbow crutch, and a head member so arranged that it can be turned independently of the tube lengths, for the purpose of locking the sections or unlocking them. 50

2. A crutch as claimed in Claim 1 in which the inner tube just below its upper end has an external collar to form a stop to prevent the inner tube being telescoped too far into the outer one, and in which the top of the inner tube 55

above the collar spigots into the crutch head so that the latter can turn thereon.

3. The combination with the crutch claimed in Claim 1 of a locking device comprising a taper plug or cone member of such size that it will wedge itself into the expansible end of the smaller tube, and a rod screw-threaded at the lower end so that it can be screwed into an axially threaded hole in the said plug, its other end being splined into a corresponding portion of the head member or otherwise so formed that the turning of the head member will turn the rod also and either draw the plug forcibly into the expansible end of the inner tube, or enable the plug to be forced out of contact with the expansible end.

4. A crutch as claimed in Claim 1 in which the head member has a laterally projecting tubular part into which is adapted to telescope another tube so as to be extensible to form a crutch head, or contractible to form a walking stick handle.

5. A crutch as claimed in Claims 2 and 3 in which the telescopic extension of the head member has a longitudinal slot, and the upper end of the rod member passes through this slot and has a nut or head at the top for keeping the extension of the tubular head extended when the tubular lengths of the crutch are locked together by the locking device.

6. An improved crutch so arranged and constructed that it can be converted from a crutch for giving support beneath the arm pit, into a walking stick or elbow crutch substantially as described with reference to the drawings annexed.

Dated this 18th day of December, 1919.

25.

For the Applicant,

W. P. THOMPSON & Co.,  
12, Church Street, Liverpool,  
Chartered Patent Agents.



[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

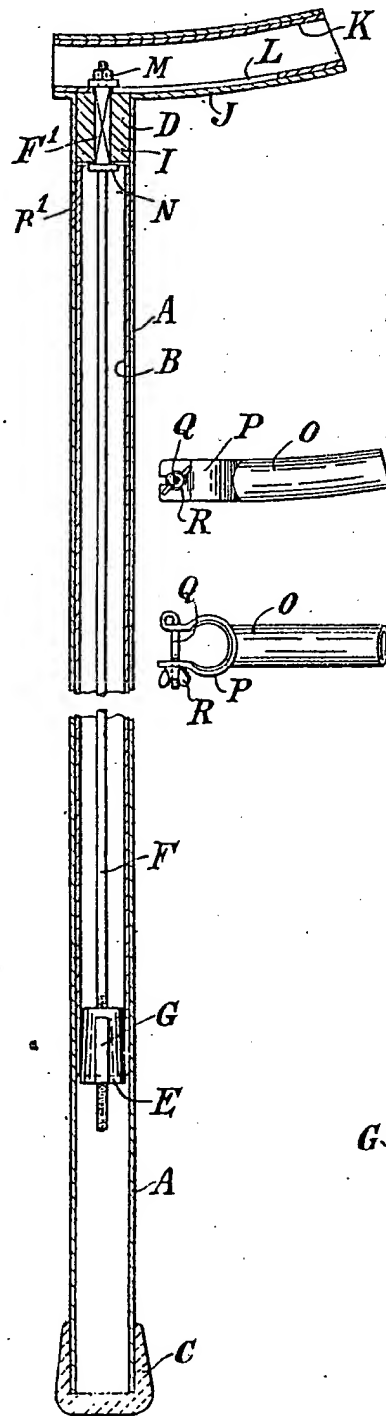


Fig. 2.

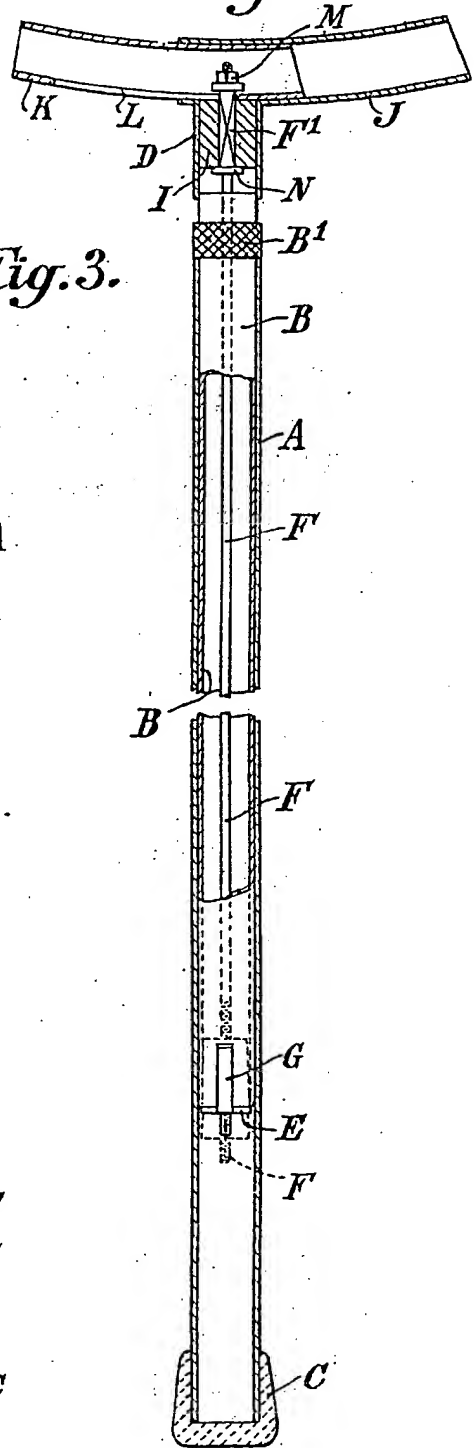


Fig. 3.

